B&B electronics
MANUFACTURING COMPANY

Rugged and Reliable. Easy to Use.

GhostBridge5
Wireless Ethernet Bridge

"Installation was as easy as hanging a picture."

Walter Horigan, President, Vortechs Automation

WIRELESS ETHERNET WAS NEVER THIS EASY

- Complete Solution…Everything you need in one box, ready to go.
- Zero Set-up…Aim it, mount it, plug it in. Done.
- High Speed…150 Mbps means no bottlenecks or latency problems.
- Long Range…Whopping 15dBi gain moves data up to 9 miles.
- Worry-free Security…WPA2 128-bit security right out of the box.

See page 37 for complete specifications.

ETHERNET

Enable and extend your devices. Gigabit, PoE, fiber and management options.

SERIAL

Converters, isolators and repeaters – from the Serial Communication Experts.

USB

Not your wimpy home version. Plug and play convenience with industrial strength ruggedness and isolation.

WIRELESS

Radio modems and I/O, Wi-Fi, bridges and access points. Ranges up to 60 km.

+353 (0)91 792 444

www.bb-europe.com

ISSUE 20

Find It Fast. Get It Fast. *Hundreds of Data Communication Products at Your Fingertips*

CUSTOMER FAVORITES!

USB Inline Isolated Converter

This pocket sized converter easily connects serial devices while protecting your PC from power surges and spikes. High retention ports are 50% stronger than standard connectors.

See page 31

USOPTL4

Ultra-Compact Unmanaged 5 and 8 Port Ethernet Switches

New, and rapidly moving off the shelves are the rugged, ultra-compact 5 and 8 port unmanaged Ethernet Switches. Copper and LC fiber options available. At less than 1" wide, they're easy to slot in where space is at a premium.

See page 24

ESW105 and ESW108

Isolated DIN Rail Mount Serial Converter

Out most popular serial converter is also our best value. Compact design fits neatly into cabinets, and rock-solid reliability will keep it trouble-free.

See page 10

485LDRC9

WHAT'S INSIDE

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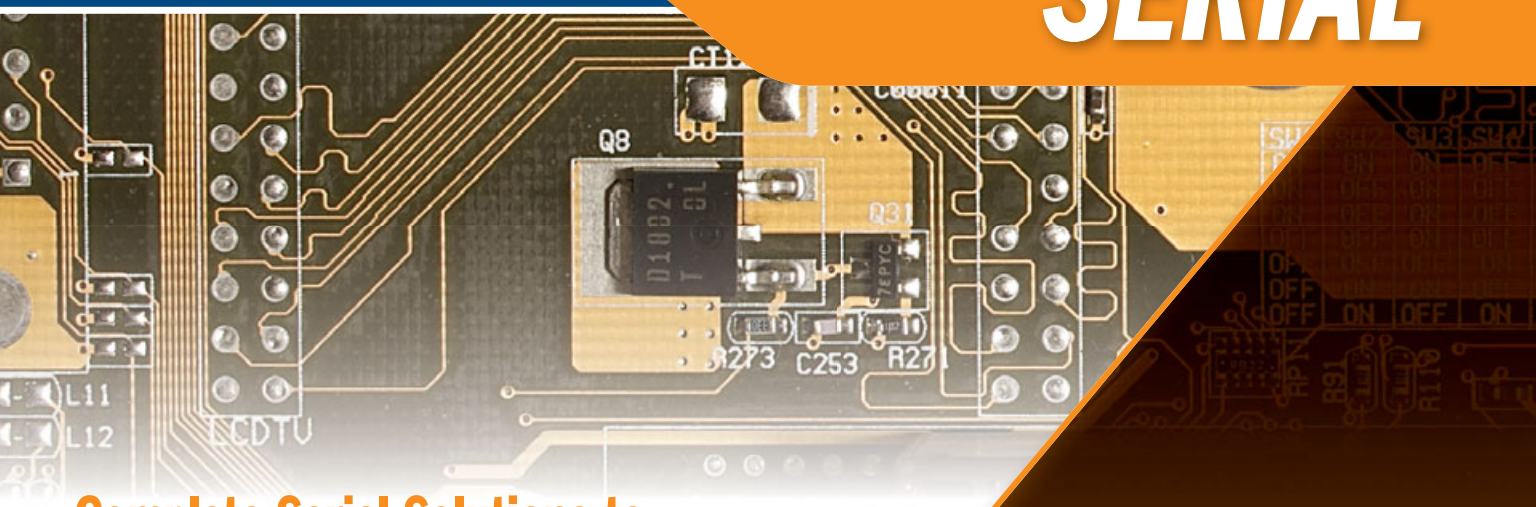
SERIAL



Complete Serial Solutions to Keep Your Legacy Equipment

Mark Twain once said, “the reports of my death have been greatly exaggerated.” Pundits have been predicting the death of serial communications for years - but billions of dollars of perfectly good equipment continues to perform everyday. To keep your legacy equipment communicating and smoothly integrated with new technologies, B&B Electronics has developed the most extensive line of serial conversion and isolation products on the market today.

Built tough to handle the most demanding environments, our serial products are rugged and reliable. We design, build and test right here in the United States ensuring top quality and in-stock, fast delivery.

You take pride in what you do every day…and so do we. When it comes to serial data connectivity, you won’t find a better resource than B&B Electronics. Off the shelf or custom solutions, we know serial.

New in Serial...

Compact, Heavy Industrial Rated RS-232 to RS-422-485 Panel Mount Converters

Our SCP Series is designed and tested to meet EMC standards. Isolated and non-isolated models available..

See page 4 for details

Need Wide Temp and Isolation?

Our toughest new SCP model has 2kV isolation and wide temp protection.

See page 4 for details

SECTION CONTENTS

PORT POWERED CONVERTERS

No power supply needed!

pages 4 - 5

IN-LINE CONVERTERS & REPEATERS

Economical choice - still features robust isolation.

pages 6 - 9

ILINX HARDENED CONVERTERS & REPEATERS

C1Div2 certified for the toughest applications.

pages 10 - 12

FIBER OPTIC CONVERTERS, MODEMS & HUBS

Extend serial data far beyond the 4,000 ft RS-485 limit.

pages 13 - 14

SPLITTERS, DATA TAPS & PORT COMBINERS

Keep your job easy with these simpler technologies.

page 15

SPECIALTY CONVERTERS

Current loop, TTL, CAN, card converter products

pages 16

Top Port Powered Converters

Easy to buy - Easy to use - No power supply or software drivers needed!

Convert TD and RD RS-232 lines to RS-422/485 in a snap

Features & Benefits

- Powered from RS-232 handshake lines – no power supply needed
- Extend RS-232 signals to 4,000 feet – (1.2 km)
- Communicate at baud rates to 115.2 kbps
- Automatic Send Data Control means no software drivers to install or manage

Many laptop PC's reduce power to the RS-232 port to save battery life. At distance limits of RS-422/485, you might need extra power. For most applications, port power is all you need – but we want you to be covered – just in case.

485SD9TB
"Best selling isolated inline converter"

APPLICATIONS: Ideal for field service or any place you need easy to use, compact, economical conversion

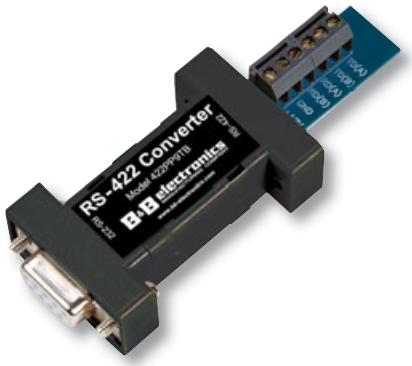
485SD9TB	Port Powered RS-485 converter
422PP9TB	Port Powered RS-422 converter

The port powered product family is an outstanding choice for field service, simple conversion between a PC and serial device, or any application where an extra power supply adds clutter. Our compact, easy-to-use converters are inexpensive, simple, reliable solutions for serial conversion.

Our converters also feature Automatic Send Data Control. This circuit keeps driver control in the converter hardware which eliminates your need to work with software at all. It monitors data flow and enables the driver during transmission and automatically disables it when no data is being sent. No need for you to rework software or install new drivers!

Why would I need a power supply with a port powered converter?

Our engineers have squeezed every last Milliwatt of power out of a RS-232 port eliminating the need for an extra power supply. If you're working at the distance limits of RS-422 or 485, you might want an extra "boost" of power with an optional power supply. However, for the vast majority of applications, port power is all our efficient converters need to get the job done.



422PP9TB
"Best selling RS-422 converter"

Port powered RS-422 converters

422PP9TB

Our #1 Best Selling RS-422 Converter

Simple….Economical…and Flexible

- RS-422 on terminal block for easy, flexible wiring
- RS-232 on DB9 connector (female)

422PP9TB	RS-422 TB Port Powered Converter
PS2EU-1000	Optional Power Supply
PS2UK-1000	Optional Power Supply

422PP9R

A Popular DB9 choice

For when your RS-422 terminates on a DB9

- RS-422 on DB9 connector (female)
- RS-232 on DB9 connector (female)

422PP9R	RS-422 Port Powered Converter

422LP25R

The solution for legacy DB25's

Quick and easy for your legacy DB25

- RS-422 on DB25 connector (male)
- RS-232 on DB25 connector (female)

422LP25R	RS-422 DB25 Port Powered Converter

422LPCOR

DB25 with terminal block wiring

DB25 and the flexibility of terminal block wiring

- RS-422 on terminal block
- RS-232 on DB25 connector (female)

422LPCOR	RS-422 TB DB25 Port Powered Converter
PS2EU-1000	Optional Power Supply
PS2UK-1000	Optional Power Supply

Port powered RS-485 converters

485BAT3

RS-422/485 versatility

Our most versatile converter – with easy extra power

- Need extra power? Slip in 2 AAA batteries OR 485PS2 power supply
- DIP switches to easily configure either RS-422 or RS-485
- RS-422/485 2, 4-wire on terminal block, RS-422 on DB9 connector (female)

RS-422	Port Powered (or Battery) Converter
PS2EU-1000	Optional Power Supply
PS2UK-1000	Optional Power Supply

485SD9TB

#1 Best selling port powered converter

Easy to buy, easy to use

- RS-485 2-wire on terminal block for easy, flexible wiring
- RS-232 connector on DB9 (female)

485SD9TB	RS-485 Port Powered Converter
PS2EU-1000	Optional Power Supply
PS2UK-1000	Optional Power Supply

485SD9R

When RS-485 uses a DB9

Simple to use DB9 conversion

- RS-485 2-wire on a DB9 connector (female)
- RS-232 connector on DB9 (female)

485SD9R	RS-485 2w Port Powered Converter

4WSD9TB

Wire it just how you need it

Versatile option with flexible wiring and configuration

- DIP switches to easily configure either RS-485 or RS-422
- RS-485 2 or 4-wire OR RS-422 on terminal block for ultimate flexibility
- RS-232 connector on DB9 (female)

4WSD9TB	RS-485 2/4w Port Powered Converter
PS1EU-1000	Optional Power Supply
PS1UK-1000	Optional Power Supply

4WSD9R

RS-422/485 flexibility on DB9

RS-422 or RS-485 at the flick of a switch

- DIP switches to easily configure either RS-485 or RS-422
- RS-485 2 or 4-wire OR RS-422 on DB9 connector (female)
- RS-232 connector on DB9 (female)

4WSD9R	RS-485 2/DB9 Port Powered Converter
PS1EU-1000	Optional Power Supply
PS1UK-1000	Optional Power Supply

485BAT3

Our most versatile converter!

Use 2 AAA batteries for maximum distance and portability

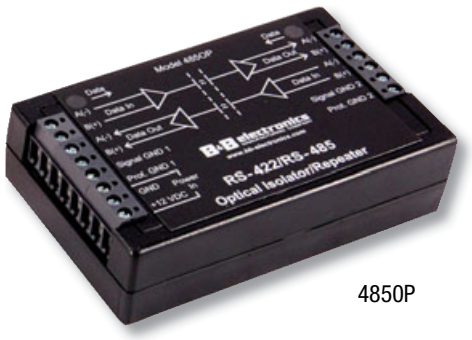
- Need extra power? Slip in 2 AAA batteries OR use a power supply
- DIP switches to easily configure either RS-485 or RS-422
- RS-485 2 or 4-wire OR RS-422 on DB9 connector (female)

485BAT3	RS-485 Flx Port Powered Converter
PS2EU-1000	Optional Power Supply
PS2UK-1000	Optional Power Supply

RS-422/485 Optically Isolated Repeater

Protects AND extends with a single device

Powerful protection and a range increase of up to 4,000 extra feet – It's like two devices in one!



4850P

Superior optical isolation and ease of use

- Wiring schematic right on the label eliminates guess work
- Terminal blocks for RS-422 or 2 and 4-wire RS-485
- 2000V, 2-way optical isolation protects from spikes, surges & ground loops

4850P	RS-422/485 Optic Isolated Repeater

Accessories

BP09AD0010	DB9 NovaHood Connector Cover Kit
BP25AK0020	DB25 NovaHood Connector Cover Kit
DB9P	DB9 Male 9-pin Connector

RS-232 Line Repeaters

Double the range of your RS-232 data signal with B&B repeaters!

Daisy chain multiple repeaters for even greater distances

232LB9R

232LB2

Amplify weak signals up to the RS-232 standard

- Model 232LB9R is a 9-pin version, boosting all 8 signal lines
- Model 232LB2 is a 25-pin version, boosting TD, RD, RTS, CTS, CD and DTR

APPLICATIONS: Computers, laptops and some desktops with low-power ports are unable to drive port powered devices or full-length RS-232 cabling. These repeaters solve that problem.

232LB9R	RS-232 repeater DB9F to DB9M
232LB2	RS-232 repeater DB25F to DB25M

Need Power?

PS1EU-1000	12VDC@100mA Power
PS1UK-1000	Supply, Wall transformer

Need Cables?

See online for cable options

4-Channel RS-232 Optical Isolator

Protect up to 4 channels with a single device

Confidently protects equipment with 2,000 volts of isolation

Features & Benefits

- RS-232 on DB9 male connector
- RS-232 on DB9 female connector
- Requires external power supply (sold separately)
- 2000V, 2-way optical isolation

APPLICATIONS: Ideal for use with laptops that may have low powered serial ports

9POP4	4-Channel Optical Isolator
PS1EU-1000 PS1UK-1000	12 VDC power supply

9POP4

Economical In-line Isolator

Quick, easy to use port powered protection

Protecting your equipment from power surges, spikes and ground loops has never been easier

Connect it and forget it

- RS-232 on DB9 male connector
- RS-232 on DB9 female connector
- Port powered, no external power supply required
- 2500V, 2-way optical isolation

APPLICATIONS: The simplest & easiest optical isolator available for RS-232

9SPOP2	2500V, 2-way optical isolator

9SPOP2

4 kV RS-232 Optical Isolator

Twice the protection of standard isolators

When you want extra insurance from lightening strikes, ground loops and accidental shorts

4,000 volts of isolation

- RS-232 on DB25 male connector
- RS-232 on DB25 female connector
- Port powered OR use an optional external power supply

232SPHI4	4,000V, 2-way optical isolator
PS1EU-1000 PS1UK-1000	12 VDC power supply

232SPHI4

Isolated In-line Converters

Isolation and conversion at the right price

Top of the line Modbus-compatible serial conversion and isolation in one compact case

DB9 Model
4WSD90TB

DB25 Model
4WSD250TB

Features & Benefits

- Automatic Send Data Control means no software drivers needed
- Removable terminal blocks for RS-422/485 make wiring easy
- 2000V 2-way optical isolation
- Accepts external power from 10-48VDC
- Available in both female DB9 or DB25 RS-232 inputs

Protecting valuable equipment is always a consideration when building your data network. Select any of B&B Electronic's isolated in-line converters and you have confidence your equipment is protected from power surges, spikes and ground loops. Peace of mind doesn't have to cost an arm and a leg.

4WSD90TB	Isolated Converter - DB9 female
4WSD250TB	Isolated Converter -DB25 female
PS2EU-1000 PS2UK-1000	120 VAC to 12 VDC power supply

Our Best Value in an Isolated Serial Converter

Saving money doesn't mean you sacrifice protection

Buy only the protection and features you need

4850I9TB

Features & Benefits

- 1,500V isolation
- Requires 12VDC external (sold separately)
- DB9 female on RS-232
- Terminal block on RS-422/485

If you don't need flexible wiring options, Modbus compatibility, 2,000V 2-way optical isolation, or Automatic Send Data Control, then don't pay for it. Our 4850I9TB is a solid serial converter with 1,500V isolation protection. It will convert RS-232 to RS-422 or RS-485 (2 or 4 wire) and do so at a bargain price.

4850I9TB	Isolated Serial Converter
PS2EU-1000 PS2UK-1000	120 VAC to 12 VDC power supply

Specialty In-line Converters

No matter what your application – B&B has the right converter for you

Simple, low cost options for communicating with legacy equipment

485TBLED 485CSP2 485PTBR 485DSS 422LCOR 422CEC

Extend communications up to 4,000 feet with B&B's standard, non-isolated RS-485 converters.

If your legacy device has DB25 connectors and you need multi-channel RS-232 to RS-422 conversion, choose from 2 or 8 channel options.

Network enable "dumb" RS-232 devices with our addressable smart switch (485DSS). This little switch converts those old devices into network nodes so you can program, control or monitor them over your RS-422 or RS-485 network up to 4,000 feet.

Features & Benefits

- All these converters are value priced so you play only for the features you need
- Simple to use – simple to install
- More product options available at **www.bb-europe.com**
- All B&B Electronics manufactured products come with a 5-year warranty

Model No.	485TBLED	485CSP2	485PTBR	485DSS	422LCOR	422CEC
Extends up to 4000 ft	✔	✔	✔	✔	✔	✔
Auto Send Data Control	✔	✔	✔	-	-	-
RS-232 Connector	DB25 female	DB25 female	DB9 female	DB25 male	DB25 female	DB25 female
RS-422 Connector	-	-	-	2 or 4 wire terminal block	DB25 male	DB25 male
RS-485 Connector	Terminal Block	Fused Terminal Block	Pluggable terminal block	2 or 4 wire terminal block	-	-
Number of Channels	-	-	-	-	2	8
Special Features:	Data flow LEDs. SDC or software driver control. RS-422 systems, too	Built-in surge protections with replaceable fuses on RS-485 side. LEDs show traffic. For 2 or 4-wire RS-485 or RS-422	For 2-or 4-wire RS-485. Full duplex operation possible.	Addressable smart switch. 2 or 4-wire RS-485 or RS-422	Supports TD, RD LED traffic indicators	Supports TD, RD, RTS, CTS, DTR, DSR, DCD, spare
Fuses:	-	4F125 (replaceable)	-	-	-	-
Power Supply:	PS2EU-1000 PS2UK-1000	PS2EU-1000 PS2UK-1000	PS2EU-1000 PS2UK-1000	PS2EU-1000 PS2UK-1000	PS1EU-1000 PS1UK-1000	PS1EU-1000 PS1UK-1000

Industrial RS232 to 422/485 Converters

Customer Favorite

Rock-solid reliability at the right price

485LDRC9

Features & Benefits

- 2kv 2-way optical isolation protects your equipment
- DIN rail mounting
- Wide temperature rated (-40 to 80°C)
- Modbus compatible
- DB9 or terminal block connections for RS-232

Our most popular serial converter is also our best value. Its compact design fits neatly in tight cabinets where it keeps working day in and day out. Automatic Send Data Control means easy set-up and no software drivers to deal with.

This customer favorite is available pre-packaged with a matched power supply and 6 foot serial cable.

APPLICATIONS: Factory automation, In-cabinet conversion, Warehouse automation, Security

Accessories...

Power supplies
35mm DIN rail
Panel mount brackets
Spare terminal blocks
Cables

Everything you need in one box 485LDRC9KT

Includes converter, power supply & cable

485LDRC9	Isolated DIN Rail Mount Converter
MDR-20-24	24VDC Slimline DIN power supply
9PAMF6	DB9 Male to DB9 cable, 6 ft.

SERIAL

Triple Isolation and Class I, Division 2 Certification

Our lowest price ever on our most versatile serial converter

Modbus compatible. Wide temperature. DIN rail mounting.

485DRCi

Features & Benefits

- 3-way optical isolation, 2kV on input/output and power circuits
- Wide temperature (-40 to +80°C)
- Modbus compatible
- DB9 connection for RS-232
- Removable terminal block connections for RS-422/485

Rugged and reliable AND under €200. Our model 485DCRi can handle just about any environment you've got with ease and long term peace of mind. Removable terminal blocks make wiring a snap, and our Automatic Send Data Control means no software drivers to contend with. Built-in switchable termination and biasing make setup quick and easy. And as always with B&B Electronics products, you get a five year warranty.

APPLICATIONS: Heavy Industrial, Oil and Gas, Water/ wastewater, Sub-metering, Electric utilities, Traffic control

485DRCi	Triple isolated DIN rail converter
MDR-20-24	24VDC Slimline DIN power supply
9PAMF6	DB9 Male to DB9 cable, 6 ft.

ILinx™ Hardened Serial Converters

Our toughest converter is now Class 1, Div 2 certified

Harsh environment? No problem. Shock and vibration tested. IEC 61850 compliant. Wow.

Features & Benefits

- 3-way isolation, 2kV on input/output and power circuits
- Wide Temperature (-40 to +80°C)
- Modbus compatible
- Rugged IP30 metal panel mount case with DIN rail adapter clips (see below)
- Removable terminal block connections for RS-422/485

485DRCI-PH

Some applications simply demand the toughest products you can build. The Ilinx Hardened 485DRCI-PH converter is absolutely the toughest industrial serial converter we make. It is designed to meet the stringent IEC 61850 requirements of electrical substations, but its resistance to shock loads and vibration make it perfect for transportation – or any harsh environment. Like our other converters, Automatic Send Data Control and built-in switchable termination and biasing make set-up easy, and no software drivers required.
IEC 60068-2-6 compliant to 4G vibration. IEC 60068-2-27 compliant to 50G shock.

APPLICATIONS: Traffic and transportation, Smart-grid, Electric utilities, Heavy industrial

485DRCI-PH	Hardened 3 way iso serial converter
PS5R-SC24	Class 1 Division 2 24VDC, 1.25A DIN rail power supply
DRAD35	DIN rail adapter clips (pair)

Custom Built Products and OEM Solutions

What to do when you don't see exactly what you need? Customise!

Custom Engineering is a core service at B&B Electronics – and it's easier than you think.

Designed, engineered and manufactured in the United States. Quick turnaround – no compromise on quality – we guarantee it.

Air traffic control
Control panels
Yachting navigation control
Video security
Medical equipment

If you need a data connectivity solution, but you don't see the exact product in our catalog – you can still turn to us for the answer. Whether you have a simple modification to one of our standard products, need custom labeling, or need a completely unique design, talk to our custom engineering team.

If your specifications require wide range power inputs, rugged connectors, isolation, wide temperature performance, mounting options, software changes, case color, special packaging or documentation, give us a call. Our engineers love a challenge.

- In-House Design and Engineering Teams
- 100% Product Testing
- Low Minimum Quantities
- Fast Turnaround
- Full 5-year Warranty

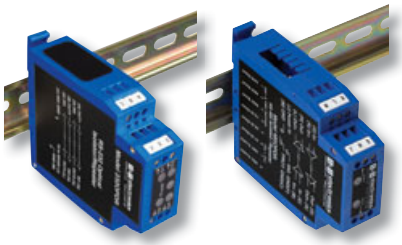
BUILT O.E.M. FOR YOU

+353 (0)91 792 444 | www.bb-europe.com/custom_request.asp

Serial Repeaters

Double the distance range of your serial devices

From standard industrial applications to the most abusive environments, you'll find the repeater just right for you.



2320PDR 4850PDR

2320PDRI 4850PDRI

2320PDRI-PH 4850PDRI-PH

These repeaters get the job done without breaking the bank.

Our base model features 2kV isolation and is a terrific choice for standard industrial applications.

If your environment is more rugged, step up to Class1 Division2, 3-way optical isolation and wide temperature protection with ILinx. Tough, but affordable – ILinx performs day after day, year after year in environments that would demolish imitators.

ILinx Hardened has an IP30 rated metal panel mount enclosure and was originally designed for electrical substations. Specifications even exceed NEMA TS1/TS2 requirements for transportation. It's our toughest repeater.

Features & Benefits

- Automatic Send Data Control means no software drivers to install or manage
- Wide temperature (-40 to +80°C)
- LED indicators for power and data
- Modbus compatible

Save with Bundled Kit

2320PDRKT

Includes converter & matched power supply.

Save with Bundled Kit

4850PDRKT

Includes converter & matched power supply.

Need Power?

MDR-20-24 MDR-20-12

See online for details

Pick the serial repeater that's right for you

ILinx Repeaters Model No.	2320PDR	4850PDR	2320PDRI	4850PDRI	2320PDRI-PH	4850PDRI-PH
Optical Isolation	2kV, input/out	2kV, input/out	2kV, input/out/power	2kV, input/out/power	2kV, input/out/power	2kV, input/out/power
Modbus Compatible	✔	✔	✔	✔	✔	✔
Wide Temp	✔	✔	✔	✔	✔	✔
RS-232 Connector	Terminal Block	-	DB9	-	DB9	-
RS-422/485 Connector	-	Terminal Block	-	Terminal Block	-	Terminal Block
LED for Power & Data	✔	✔	✔	✔	✔	✔
Automatic Send Data Control	✔	✔	✔	✔	✔	✔
Class 1/Division 2	-	-	✔	✔	✔	✔
Removable terminal blocks	-	-	-	✔	-	✔
Mounting	DIN rail	DIN rail	DIN rail	DIN rail	Panel	Panel
IEC 60068-2-6 (4G vibration)	-	-	-	-	✔	✔
IEC 60068-2-27 (50G shock)	-	-	-	-	✔	✔
Power Supply	MDR-20-24	MDR-20-24	MDR-20-24	MDR-20-24	PS5R-SC24	PS5R-SC24
Kit Available?	✔	✔	-	-	-	-

Serial to Fiber Optic Converters

Single and Multi-mode fiber models – The right specifications at the right price

Rugged Dependability, Whatever your Application

FOSTCDR | FOSTCDR-inv | FOSTCDRi | FOSTCDRi-SC | FOSTCDRi-PH-MC | FOSTCDRi-PH-SC

Our fiber converters are packed with the functionality you need regardless of your environment.

Choose the basic FOSTCDR line for standard industrial installations. Featuring 2-way optical isolation, FOSTCDR extends your network up to 4.0km at our best price.

If you need a range up to 9 miles, triple isolation, or C1/Div2 certification then the ILinx™ FOSTCDRi is your best choice and best value.

The toughest environments will demand ILinx™ Hardened, shock and vibration tested, IEC 61850-3 and IEEE 1613 certified. IP30 metal enclosure can handle the abuse.

Features & Benefits

- 2-way or 3-way optical isolation, depending on model selected
- Modbus Compatibility
- Wide temperature (-40 to +80°C)
- LED indicators for power and data
- Single and multi-mode fiber options

Save with Bundled Kit

FOSTCDRKT
Includes converter & matched power supply.

Looking For

Another model?
Check online at
www.bb-europe.com

Need Power?

MDR20-24 24VDC
1A DIN rail power

Pick the serial to fiber converter that's right for you

ILinx Fiber Optic Model No.	FOSTCDR	FOSTCDR-inv	FOSTCRDi	FOSTCDRi-SC	FOSTCDRi-PH-MC	FOSTCDRi-PH-SC
Optical Isolation	2kV, input/out	2kV, input/out	2kV, input/out/power	2kV, input/out/power	2kV, input/out/power	2kV, input/out/power
Wide Temperature	✔	✔	✔	✔	✔	✔
Modbus Compatible	✔	✔	✔	✔	✔	✔
Input Power	10-30 VDC	10-30 VDC	10-48 VDC	10-48 VDC	10-48 VDC	10-48 VDC
Automatic Send Data	✔	✔	✔	✔	✔	✔
LED for power & data	✔	✔	✔	✔	✔	✔
Multi-mode range	4km	4km	4km	-	4km	-
Single-mode Range	-	-	-	15km	-	15km
Removable Terminal Blocks	-	-	✔	✔	✔	✔
Mounting	DIN rail	DIN rail	DIN rail	DIN rail	Panel	Panel
Class 1/Div 2	-	-	✔	✔	✔	✔
IEC60068-2-6 compliant	-	-	-	-	✔	✔
IEC 60068-2-27 compliant	-	-	-	-	✔	✔
IEEE 61850-3 & IEEE 1613	-	-	-	-	✔	✔
Kit Available?	✔	-	-	-	-	-

Fiber Optic Modems, Converters and Hubs

RS-232 9-pin serial to fiber modem

9PFLST

Features & Benefits

- RS-232 9-pin serial to fiber modem
- Port powered – no external power required
- TD, RD, RTS and CTS supported

9PFLST	RS-232 9-pin serial to fiber modem
PS1EU-1000 PS1UK-1000	Opt 120 VAC to 12 VDC power supply

RS-232 25-pin serial to fiber modem

232FLST

Features & Benefits

- RS-232 25-pin serial to fiber modem
- Port powered – no external power required
- TD, RD, RTS and CTS supported

232FLST	RS-232 25-pin serial to fiber modem
PS1EU-1000 PS1UK-1000	Opt 120 VAC to 12 VDC power supply

In-line fiber optic converter

FOSTC

Features & Benefits

- Data rates to 115.2 Kbps
- Serial connectors DB25 female
- Input power range (10-14 VDC) – Power supply required

FOSTC	Serial/fiber converter
MDR-20-12	Opt 12 VDC, 1.67A slimline power supply
PS1EU-1000 PS1UK-1000	Opt 120 VAC to 12 VDC @500mA power sup

Fiber optic to serial converter hub

FDS4FE

Features & Benefits

- Monitor and control dozens of RS-232 nodes by cascading
- RS-422/485 data rates up to 460 kbps; RS-232 up to 115.2 kbps
- RJ-45 expansion port extends RS-422 from each unit

FDS4FE	Fiber optic to serial converter hub
FDF4SE	Serial to fiber optic converter hub
PS-USB-EU PS-USB-UK	120 VAC to 15 VDC @ 1 A power supply

Modem Data Splitters, Port Combiners, and Data Taps

Modem data splitters

Computers and terminals use one modem without switching

Features & Benefits

- Use with modems, scanners, scales and other serial devices
- Connect multiple PC's to a single peripheral
- Port powered – no external power required
- Quick plug and play installation – no configuration required
- Device sharing gains you both reliability and system economy

	PC	Peripheral
9PMDS	2 DB9 female	1 DB9 male
232MDS3	3 DB25 female	1 DB25 male

9PMDS

Data Taps

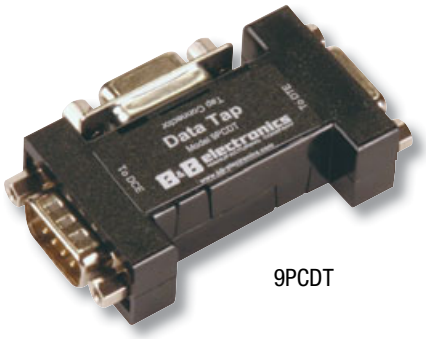
Monitor and record serial data streams

Tap your serial data stream and transparently feed another device

Features & Benefits

- Dipswitches allow monitoring of the main transmit and receive data lines
- Easy to install – can be left in place
- Transparent connection
- No external power required

	Straight through connectors	Monitoring Port
9PCDT	1 DB9 male, 1 DB9 female	DB9 female
232CDT	1 DB25 male, 1 DB25 female	DB25 female



9PCDT

Port Combiners

Two or more serial devices can share a PC serial port

Monitor and control multiple serial devices with a single PC – Ideal for devices with intermittent PC access!

Features & Benefits

- One PC monitors & controls multiple peripherals
- Cascade combiners to connect many devices
- Automatic or software PC access control
- Quick, easy installation. May be left in place.

Model 232PTC includes power supply.

Model 232PTC9 requires external 12 VDC @ 100mA power supply.

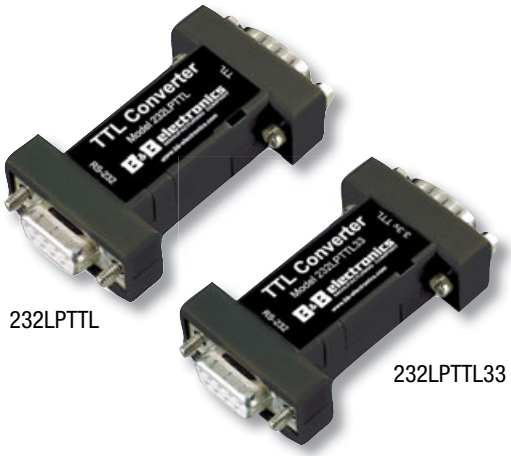
	PC	Peripheral
232PTC9	1 DB9 female	2 DB9 female
232PTC	1 DB25 female	2 DB25 female
PS1EU-1000 PS1UK-1000	Power supply for 232PTC9	

232PTC9

TTL Converters and Current Loop Devices

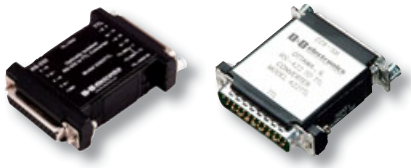
Make easy connections between TTL equipment and RS-232 ports

Simple and reliable – Easy to use



232LPTTL

232LPTTL33



2320TTL

422TTL

Features & Benefits

- All models convert 2 channels is each direction from TTL to RS-232/422
- Isolated and non-isolated versions available
- Variety of power options available including port powered, USB bus powered or powered by an external power supply (see below)

Our most popular TTL converters are the port powered 232LPTTL and the port powered 232LPTTL33 (9-pin 3.3V). These non-isolated converters run at a maximum baud rate of 115.2 kbps. If you need optical isolation, the 2320TTL is the customer favorite and runs at a maximum baud rate of 38.4 kbps. The RS-232 side is port powered, but the TTL side requires +12 VDC at 100mA power supply (item 232PS).

		Power Supply
232LPTTL	DB9 female/DB9 male (5V)	Port-powered
232LPTTL33	DB9 female/DB9 male (3.3V)	Port-powered
422TTL	DB25 female/DB25 male (5V)	PS1EU-1000 / PS1UK-1000
2320TTL	DB25 female/DB25 male (5V)	PS1EU-1000 / PS1UK-1000

Need Cables?
See online for details

Power Supplies
PS1EU-1000
PS1UK-1000

USB Bus Powered
versions available at
www.bb-europe.com

SERIAL

Current Loop Converters

Built with high speed optical isolation - to couple and isolate TD & RD

Designed for 20 mA – other values available

232CL9R

232PCLR

232CLDR

Features & Benefits

- All converters have a transmit (T+ and T-) and receive (R+ and R-) loop
- Maximum baud rate recommendation is 19.2 kbps
- More current loop converter models available at www.bb-europe.com

The 232CL9R is our most popular current loop model. DB9 female and terminal block connectors. Port powered for passive loop installations; external power supply is needed to generate an active loop.

The 232PCLR is an RS-232 to current loop converter that requires a power supply for the RS-232 side of the converter. DB25 female, DB25 male connectors.

The 232CLDR is DIN rail mountable, wide temperature, UL recognised version for industrial applications. Terminal block connections.

		Power Supply
232CL9R	DB9 Current Loop Converter	PS2EU-1000 / PS2UK-1000
232PCLR	DB25 Current Loop Converter	PS1EU-1000 / PS1UK-1000
232CLDR	Industrial Current Loop Converter	MDR-20-24

Power Supplies and Accessories
MDR-20-24 or MDR -20-12 depending on application
PS1EU-1000 / PS1UK-1000 120 VAC to 12 VDC @ 100mA
PS2EU-1000 / PS2UK-1000 120 VAC to 12 VDC @ 100mA

Need Cables?
See online for details

ETHERNET SERIAL SERVERS

Why Replace Expensive Devices simply because they have serial ports?

Monitoring and controlling legacy serial devices through your Ethernet LAN or WAN has never been simpler. B&B Electronics' Vlinx™ family of Serial to Ethernet device servers offers reliable connectivity options in a wide variety of port counts and configurations. Our Modbus Gateways solve a whole range of connectivity problems by bridging unlike Modbus devices and networks to your Ethernet.

Different applications demand different solutions. From commercial installations to the harshest heavy industrial environments, B&B Electronics has a solution for you.

So, if you want to monitor a security gate across the parking lot or a temperature controller across the world, B&B Electronics has a Serial Device Server or Gateway to fit your application.

Don't see what you need? Not exactly sure what would work best? Be sure to check out our complete product selection at **www.bb-europe.com** or contact our free technical support team at **+353 (0)91 792 444**. They'll set you up with the solution that's right for you.

Coming Soon in Ethernet...

Serial Servers
VESR400 Series

Ruggedized, 4 Port Ethernet to Serial Servers with fiber options. Wide temp, flexible mounting. Call for details and availability.

SECTION CONTENTS

ETHERNET TO SERIAL SERVERS
Both commercial and industrial models available
pages 18-19

INDUSTRIAL ETHERNET TO SERIAL SERVERS
For industrial environments with full fiber options
page 20

QUATECH WI-FI SERIAL SERVERS
Wi-Fi serial servers for industrial environments
page 21

INDUSTRIAL MODBUS ETHERNET TO SERIAL GATEWAYS
Copper and fiber options available
page 22

Our Best Selling 4 Port Industrial Serial Server

Sleek, rugged, power packed performer

Ethernet enable serial ports on industrial equipment. Manage them from the convenience of your desk.

ESR904 *"Customer Favorite"*

Features & Benefits

- Low latency/high throughput – view status or configure in real time
- Heartbeat Connection detects communication halts – handles reconnection
- Vlinx™ Manager Software gives you remote access from any web browser
- IP30 rugged metal case stands up to tough environments
- DIN rail mountable

Additional Features & Benefits

- Supports 2 or 4 wire RS-232/422/485
- UDP mode allows multi-cast to and from multiple IP addresses
- VCOM drivers for WIN NT, 2000,XP, Server 2003 & 2008, Vista, Windows 7
- LED indicators provide at-a-glance operational status
- Wide range power: 10-48 VDC or 24VAC

The serial ports on legacy equipment are no problem with Vlinx™ Ethernet serial servers from B&B Electronics. The ESR series are built for use in tough industrial environments.

The slim, DIN rail mountable, rugged IP30 metal enclosures survive and thrive in locations that would demolish standard commercial grade serial servers.

The 4-port ESR904 is a customer favorite, offering versatility and rock solid, guaranteed performance. They operate on a wide range of AC or DC voltages and support redundant DC power.

To read how the ESR904 worked for a Specialised Testing and Analysis System for Global Warming and Hydrocarbon Testing by Geotek, check out: **bb-europe.com**

Choose the serial server that's right for you

	ESP Series	ESR Series	VESR
Page:	24	24	25
Features:	Tough	Tougher	Toughest
Mounting	Panel	DIN Rail	DIN Rail
Temperature Rating	-10 to 80ºC	-10 to 80ºC	-40 to 80ºC
UL 508 Listing/TSA Specs			✔
Fiber Optic Ethernet			✔
Industry:			
Retail/Point-of-Sale	✔		✔
Security/Cameras	✔	✔	✔
Building Automation	✔	✔	✔
Industrial PLC/Drives/Process		✔	✔
Traffic Management			✔
Heavy Industry/Utilities			✔

APPLICATIONS: Industrial Automation, Building Automation, Security, Fuel Stations, Traffic Management

Need Power?

ESR Series

MDR-20-12	12VDC, 1.67A Slimline DIN Rail Power Supply
MDR-40-12	12VDC, 3.33A Slimline DIN Rail Power Supply

Ethernet to Serial Servers

Communicate easily with serial equipment

Troubleshoot your network and connected devices from any internet PC

ESP901

ESP902

ESP904

ESR901

ESR902

ESR904

With Vlinx™, and included Manager software, you can Ethernet enable serial ports on equipment, then remotely access and manage from your desk. Configure and view status in real-time.

The Vlinx™ ESP line is designed for demanding commercial applications. Offering the same great communication features as the industrial line, the ESP series has panel mounting and power options for commercial installations.

The Vlinx™ ESR line are built for use in tough industrial environments. The slim rugged cases are IP30 approved and DIN rail mountable. They operate on a wide range of AC or DC voltages and support redundant DC power.

Features & Benefits

- Supports: TCP server, TCP client, UDP & virtual COM and pair modes (tunneling)
- Management: Multiple TCP client sessions
- Serial ports are software selectable for RS-232, 422 or 485, 2 or 4 wire
- VCom drivers for Windows NT/2000/XP/Vista/WIN7
- Operating temperature: -10 to 80°C

Accessories...

DRAD35
DIN rail adapter clips
(ESP series only)

Need Power?

MDR-20-12 12VDC 1.67A DIN Power Supply
MDR-40-12 12VDC 3.33A DIN Power Supply

Series Model No.	ESP ESP901	ESP ESP902	ESP ESP904	ESR ESR901	ESR ESR902	ESR ESR904
Panel Mount	✔	✔	✔			
Wall transformer power (12V)	✔	✔	✔			
Panel Mount	✔	✔	✔			
DIN Rail Mount				✔	✔	✔
Industrial power supply circuit w/terminal blocks				✔	✔	✔
Wide range power: (10-48 VDC or VAC)				✔	✔	✔
Terminal block or DB-9 male				✔	✔	✔
Terminal block wiring				✔	✔	✔
1 port	✔			✔		
2 port		✔			✔	
4 port			✔			✔
Applications	Commercial	Commercial	Commercial	Industrial	Industrial	Industrial

Vlinx™ Ethernet to Serial Servers for Harsh Environments

Cat 5 copper, single and multi-mode fiber models available

Manage your industrial network from any internet web browser

VESR901

VESR902T

VESR902D

Features & Benefits

- Slim, industrial enclosure saves DIN rail space but maintains ratings
- Web server, simple configuration software – no training required
- Low latency, high throughput lets you view status, configure in real time
- Heartbeat Connection detects failures and automatically reconnects
- Supports TCP server TCP client, UDP, virtual com and pair modes

Additional Features & Benefits

- Wide temperature protection (-40 to 80°C)
- Wide power range 10-58 VDC operation
- Class 1/Div 2 certification
- Data rate up to 230 Kbps
- VCOM drivers for Windows 2000, XP, Server 2003, 2008, Vista and 7

MORE MODELS ONLINE!

A variety of Category 5 copper, multi-mode, and single-mode fiber optic models at bb-elec.com

Model No.	Best Seller! VESR901	VESR902T	VESR902D
Serial Ports	1	2	2
Serial Connection	DB9 & terminal block	Terminal block	DB9
Ethernet Ports	1	1	1
Ethernet Connector	RJ45	RJ45	RJ45
Power Supply Required:	MDR-40-24	MDR-40-24	MDR-40-24

If it has a serial port and you have an Ethernet LAN or WAN, you can keep it in top tune with serial servers. Your control room PC will show the device as if it had a direct connection to monitor. Keep it a maximum production without leaving your desk. You can even troubleshoot remotely from outside your LAN via any Internet browser. Cell phone, remote desktop, wireless laptop – you're not harnessed to the same physical location or means of access.

In addition to standard Cat5 copper Ethernet, Vlinx™ Serial Servers have the largest selection of standard fiber optic port options available. If you use fiber for longer distance communications, or rely on the higher signal security and lower bit rate error of fiber, check out our full fiber optic product selection online at: **bb-europe.com/VESR**

Accessories...

MDR-40-24	24VDC DIN rail mount power supply. 5A output
TB5P508SR	2pk 5-position terminal block w/strain relief paddle board
DRPM25	35mm DIN rail to panel mount bracket, 25mm wide
EIRSP1	Industrial Ethernet Surge Suppressor

Quatech Range of WiFi Serial Servers

Airborne Industrial Wireless Serial Device Server
Serial to 802.11b/g Wireless LAN

- Extended operating temperature range (-40°C to +85°C)
- Plug-n-Play Serial to 802.11 Connectivity and Ethernet to 802.11 Connectivity
- Enterprise Class wireless security (WPA2-Enterprise, WPA, WEP, EAP)
- Airborne Management Center included for Quatech device discovery, control and management
- Variable DC power supply (5-36 VDC) with screw terminal connectors
- 2 kV serial ESD Surge Suppression
- Airborne SpeedLink roaming for enhanced connection reliability
- Onboard certificate delivery and storage
- Airborne PortFlex capability enables any combination of comm ports (Serial, Ethernet and 802.11 interfaces)
- CE and FCC Part 15 Class B Sub C Approval
- 5 year warranty

Airborne Industrial Wireless Access Point
802.11b/g Wireless AP and Serial Device Server

- Infrastructure Access Point/Wireless Router/Client
- Supports up to 8 clients
- Extended operating temperature range (-40°C to +85°C)
- Plug-n-Play Serial to 802.11 Connectivity and Ethernet to 802.11 Connectivity
- Enterprise Class wireless security (WPA2-Enterprise, WPA, WEP, EAP) *EAP in client mode only
- Airborne Management Center included for Quatech device discovery, control and management
- Variable DC power supply (5-36 VDC) with screw terminal connectors
- 2 kV serial ESD Surge Suppression
- Airborne SpeedLink roaming for enhanced connection reliability
- Onboard certificate delivery and storage
- Airborne PortFlex capability enables any combination of comm ports (Serial, Ethernet and 802.11 interfaces)
- CE and FCC Part 15 Class B Sub C Approval
- 5 year warranty

Airborne Enterprise Wireless Device Server
Serial to 802.11b/g Wireless LAN

- Extended operating temperature range (-40°C to +85°C) and environmental specifications
- Plug-n-Play Serial to 802.11 Connectivity
- Software-configurable 802.11b interface
- Enterprise Class wireless security (WPA-2 Enterprise, WPA2-PSK, WPA-PSK, WEP, EAP) with Certificates
- Compact Package Outline
- Integrated External Antenna
- Advanced utilities for discovery, configuration, and management of Airborne Serial device
- Worldwide Certification Support- FCC Part 15 Class B Sub C Modular Approval, IIOC, CE, ETSI, ROHS, WEEE
- Five year warranty

Airborne Heavy Duty 802.11b/g Wireless Device Server

- Extended operating temperature range (-40°C to +85°C) and environmental specifications
- Advanced security support includes WEP 64/128, WPA (TKIP), 802.1x (LEAP)
- SAE J1455 compatible power supply
- Ruggedized Deutsch enclosure and connector
- 802.11b/g compliant radio
- Quick time to market & reduced development costs
- FCC Part 15 Class B Sub C Approval
- Reduces need for RF and communications expertise
- RP-SMA connector available for cable or direct antenna connection
- Device integration does not require OS specific drivers

Airborne Embedded Wireless Serial Device Server Board
Serial to 802.11b/g Wireless LAN

- Extended operating temperatures (-40° to +85°C) and environmental specifications
- Plug-n-Play Serial to 802.11 Connectivity
- Enterprise Class wireless security (WPA2-Enterprise, WPA2-PSK, WPAPSK, WEP, EAP) with Certificates
- Plug-and-Play LAN and Internet Connectivity
- Integrated RP-SMA Connector
- Software-Configurable 802.11b/g Interface
- Advanced utilities for discovery, configuration and management of Airborne Wireless Serial Device Server
- 3 Status indicator lights
- Integrated RP-SMA Connector
- Worldwide Certification Support-FCC Part 15 Class B Sub C Modular Approval, IOC, CE, ETSI, ROHS, WEEE
- On board power supply
- 5 year warranty

Industrial Modbus Ethernet to Serial Gateways

Get seamless integration between Modbus devices
ASCII – RTU - TCP

MESR901

MESR902T

MESR921

MESR922T

Features & Benefits
- Supports up to 16 simultaneous Modbus TCP masters
- Modbus messaging priority control (source or function code selectable)
- Built in traffic monitor for instand verification of installation or diagnostics
- Free configuration software – easy programming through web browser or port
- Slim industrial enclosure saves valuable DIN rail space

Need Power?
MDR-60-24
24VDC DIN rail power supply, 5A output

More Cat 5, Single and Multi-mode Fiber options available online at www.bb-europe.com

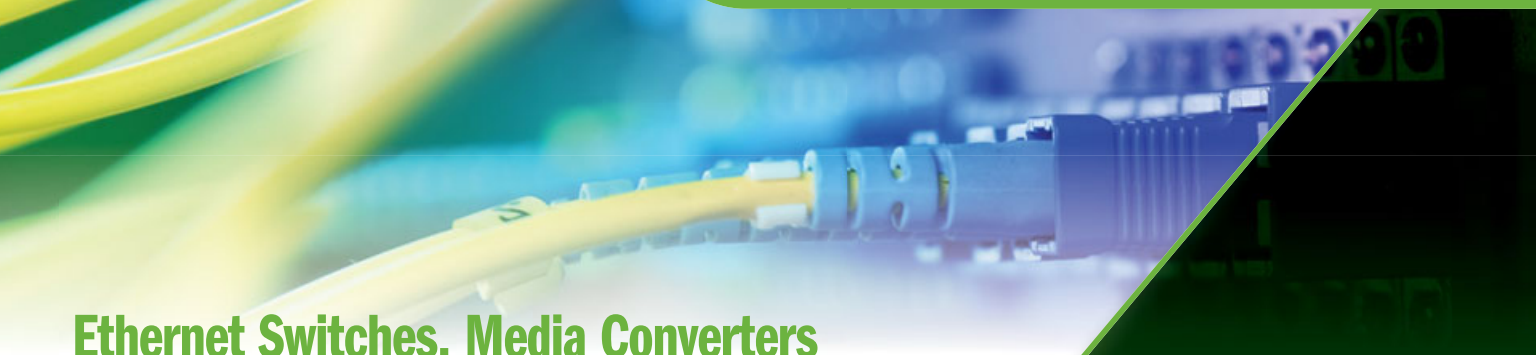
Model No.	MESR901 Most Popular	MES902T Dual Serial Ports	MESR921 Dual Ethernet Ports	MESR922T Dual Ethernet Ports
Serial Ports	1	2	1	2
Serial Connection	DB9 & Terminal block	Terminal block	DB9 & Terminal block	Terminal block
Ethernet Ports	1	1	2	2
Ethernet Connector	RJ45	RJ45	RJ45	RJ45
Heartbeat Connection	Yes	Yes	Yes	Yes
Wide Temp	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C
Class 1/Div 2	Yes	Yes	Yes	Yes
Modbus RTU or ASCII on serial ports	Yes	Yes	Yes	Yes

Technical Support Note

Mario explains Modbus

Protocols are like languages, French, English, Spanish, or Japanese. If devices are to understand each other, they must speak the same language, otherwise a translator is needed. Interfaces such as RS-232, RS-422, RS-485, or Ethernet only define the electrical interface. ModBus has several dialects, ASCII, RTU or Modbus/TCP. A modBus Gateway like the Vlinx MESR series bridges between ModBus protocols, enabling communications between ModBus devices speaking different dialects. Protocol Gateways like our ConnectPro can translate between more than 100 different protocols, enablish a device using one protocol to access data in a different protocol and electrical interface. Gateways also solve other connectivity problems, like allowing multiple “master” devices to access and share data. For a complete listing of protocols supported, visit **www.bb-europe.com**

ETHERNET SWITCHES



Ethernet Switches, Media Converters and Extenders

Ethernet isn't just for business networks anymore. More and more, you need to get your devices connected to Ethernet backbones and networks. That's why we offer a huge selection of rugged and reliable Ethernet devices designed with your demanding applications and environments in mind.

From ultra-compact 5 and 8-port models that take up less than an inch in your crowded cabinet, to 24-port rack mount models for complex applications, we've got you covered. Most of our switches have options like single and multi-mode fiber optic ports, and wide operating temperatures for use in hot enclosures and sun-baked installations. We even add redundant power inputs so you can add a back-up power supply to keep your connections up and running. We have gigabit, Power-over Ethernet (PoE) and sophisticated management options, too.

Need to reach out farther than Ethernet's 100-meter limit? Try our innovative Ethernet Extenders. They can expand your network up to 5 km over your existing copper wires. Go even farther over fiber optic lines with our Ethernet media converters.

On top of this selection, you always get fast delivery and unmatched Technical Support - before, during and after the sale. Try us. Your satisfaction is guaranteed.

New in Ethernet Switches...

ULTRA-COMPACT, UNMANAGED SWITCHES

If you're tight on space and budget, you'll love these hardened little workhorses. With LC fiber ports, you can add single and multi-mode fiber options in the same small, tiny little footprint.

See page 24 for details

WIDE-TEMPERATURE, UNMANAGED SWITCHES

If you need the extra resilience of wide-temperature protection, or extra SC or ST fiber ports, the hardened ESW200 series is your best bet. This impressive level of performance is yours at an exceptional price.

See page 24 for details

SECTION CONTENTS

NEW! ULTRA-COMPACT INDUSTRIAL HARDENED UNMANAGED SWITCHES

Little size - big performance

page 24

PLUG & PLAY UNMANAGED SWITCHES

Flexible port combinations for copper and fiber

page 25

INDUSTRIAL GIGABIT AND PoE ETHERNET SWITCHES

Unmanaged and managed switches

page 26

ETHERNET EXTENDERS

Extend your network up to 3.5 miles

pages 27-28

MEDIA CONVERTERS

Increase Ethernet distance with fiber's range & immunity

page 29

New! Ultra-compact Industrial Hardened Unmanaged Switches

Great things do come in small packages

Check out the full line of fiber combinations online at **www.bb-europe.com**

ESW108

ESW105

ESW205

ESW208

Don't let the small size fool you. The Ultra-Compact ESW100 switches are built to tough, heavy industrial specifications. Wherever space is at a premium, they'll slot right in. Six panel mount options and a DIN rail footprint of just less than an inch let you stick them where you need them. Once installed, they barely take more room than the connectors themselves. And, with LC fiber ports, you can add single or multi-mode fiber options without a bigger box. It's the smallest fiber switch on the market.

If you need more fiber ports or the extra resilience of wide-temperature, then the ESW200 series offers you 8 different copper, single and multi-mode fiber options. Same heavy industrial specifications, same features, more possibilities.

Why Wide-Temperature?

Industrial equipment usually isn't in a nice, air conditioned office. Just being in a cabinet, your Ethernet switch can experience temperatures that are a minimum of 10°C hotter than surrounding air. If the sun hits the enclosure, think the inside of your car – in August – with the windows up. If you need reliability and peace of mind, consider adding Wide Temperature Protection.

ESW100 series – the smallest fiber switch on the market

- 5 or 8 port, copper and LC fiber port options
- 6 panel mount options or DIN rail mount – all less than 1 inch wide
- Level 3, 61000-6-2 heavy industrial specifications
- IEC60068-2 shock and vibration tested
- Redundant power inputs to run on AC or DC
- Temperature range -10 to 60°C
- 5 port is 3.94" X .98" X 2.95"
- 8 port is 5.7" X .94" X 2.95"

ESW200 series

- Wide temperature options (-40 to 75°C)
- Up to 8 different copper, single and multi-mode fiber port combinations
- Same heavy industrial certifications as the ESW100 series
- Check online for features and options! **www.bb-europe.com**

APPLICATIONS: Industrial Automation, SCADA, Traffic Control, Water Management, Building Automation

	10/100	Multi-Mode	Single-Mode
ESW105	5		
ESW105-ML	4	1 (LC)	
ESW-105-SL	4		1 (LC)
ESW108	8		
ESW108-ML	7	1 (LC)	
ESW108-SL	7		1 (LC)
ESW205	5		
ESW208	8		
ESW205-T*	5		
ESW208-T*	8		

* Wide temperature options (-40 to 75°C)

Accessories...

MDR-20-14	24 VDC, 1.0A DIN rail power supply
MDR-40-24	24 VDC, 1.7A DIN rail power supply
C5UMB3FBG	Ethernet Cat5e cable, 3ft
C5UMB7FBG	Ethernet Cat5e cable, 7ft
DR19RMKT	Adjustable 19" rack mount kit

More Options

Cables
See online for details

Power Supplies
See online for details

Plug and Play Ethernet Switches

Heavy duty industrial grade workhorses

Customers consistently select this standard 6-port copper model

EIR306

Features & Benefits

- Meets NEMA TS2 requirements for temperature, shock & vibration
- Wide temperature (-40 to +75°C)
- Redundant power inputs with alarm relay outputs keeps your LAN up
- 1500V isolation keeps spikes and surges from damaging equipment

EIR306	6 port copper Ethernet switch
MDR-60-24	24 VDC, 2.5A DIN rail power supply

Also Consider:

EIRSP1 *Industrial Ethernet Surge Suppressor*
ERPMKT *Optional Panel Mount Kit*

Find a Full Range of Copper/Fiber Port Configurations Online!

Our Most Popular 8 Port Copper Unmanaged Switch

Higher port count - same rugged reliability

EIR308

Features & Benefits

- Same industrial certifications as the 6 port model above
- 10 to 30 VDC redundant power inputs for wide range power input
- IP30 metal DIN rail mount cases
- 10/100–full/half-duplex, MDI/MDIX, auto negotiation

EIR308	8 port copper Ethernet switch
MDR-60-24	24 VDC, 2.5A DIN rail power supply

Also Consider:

EIRSP1 *Industrial Ethernet Surge Suppressor*
ERPMKT *Optional Panel Mount Kit*

Find a Full Range of Copper/Fiber Port Configurations Online!

6 Copper Ports, 2 ST Multi-mode Fiber Ports

Our most popular multi-mode fiber switch

EIR308-2ST

Features & Benefits

- Same heavy industrial specifications as the copper port models above
- Wide temperature (-40 to +75°C)
- 6 copper ports, 2 fiber ports with ST multi-mode connectors

EIR308-2ST	6 copper 2 ST fiber Ethernet switch
MDR-60-24	24 VDC, 2.5A DIN rail power supply

Also Consider:

EIRSP1 *Industrial Ethernet Surge Suppressor*
ERPMKT *Optional Panel Mount Kit*

Find a Full Range of Copper/Fiber Port Configurations Online!

Industrial Gigabit and PoE Switches for Special Applications

Gigabit speed and the versatility of PoE in a variety of port configurations

For flexibility and future expansion options, several models have SFP dual port options. We also offer several PoE models. PoE offers reduced installation costs, easy setup and the ability to remotely power end devices.

These pages contain some of our most popular options. Unfortunately, we can't list each and every model. If you don't see exactly what you need, chances are it's online. Check out our full product selection online, including more Managed Switches. If you have questions about Gigabit, SFP or PoE (Power over Ethernet) – contact our Tech Support Team at **+353 (0)91 792 444** we're always happy to help you find the right solution.

Our Popular 5-Port Unmanaged Gigabit Ethernet Switch

EIR405-T

Features & Benefits

- Rugged IP30 DIN/panel mount case – built tough for industrial environments
- Wide temperature (-40 to +75°C)
- Dual power inputs with alarm output for network redundancy

EIR405-T	5 port unmanaged Gigabit switch
MDR-60-24	24 VDC, 2.5A DIN rail power supply

Unmanaged Switch at Gigabit Speed – Dual Function Port – Wide Temp

EIR418-2SFP-T

Features & Benefits

- 18 total ports – 16 10/100 and 2 10/100/100/SFP
- Wide temperature (-40 to +75°C)
- Wide power range input (12 - 48 VDC) – for a variety of applications

EIR418-2SFP-T	18 port Gigabit switch w/ SFP dual port
MDR-60-24	24 VDC, 2.5A DIN rail power supply
	SFP expansion models available online

5-Port PoE Unmanaged Industrial Ethernet Switch

EIRP305-T

Features & Benefits

- 1 standard 10/100 and 4 PoE 10/100 ports
- Wide temperature (-40 to +75°C)
- 48 VDC power input

EIRP305-T	5 port PoE unmanaged switch
MDR-100-48	48 VDC, 2A DIN rail power supply

10-Port PoE Managed Industrial Switch at Gigabit Speed

EIR610-2SFP-T

Features & Benefits

- 8 PoE 10/100 and 2 Gigabit/SFP ports
- Wide temperature (-40 to +75°C)
- Dual power inputs with alarm output for network redundancy

EIRP610-2SFP-T	10 port Gigabit managed switch
SDR-240-48	48 VDC, 5A DIN rail power supply
	SFP expansion models available online

Ethernet Extenders

Stretch your Ethernet up to 1 1/2 miles over existing copper or coaxial cable

Commercial grade and rugged industrial models available

EIR-EXTEND

EIS-EXTEND

EIS-EXTEND-C

EIS Commercial Grade

- Unique case allows stand-alone use (desktop style) or rack mount
- Easy set-up using DIP switch (local or remote setting)
- Status LED's for monitoring and connection status
- Sold as single units – however, two are required for operation
- EIS and EIR models are compatible – choose each end based on environment

EIR Industrial Series

- Ruggedized for DIN rail mount or panel mount (with optional kit sold below)
- Wide temperature rated (-40 to +75°C)
- Dual power inputs via terminal block connections
- Meets IEC61000-6-2 EMC standards for industrial environment Class 1/Div2
- Flexible extension port connectivity – RJ-11 or terminal block

WHICH MODEL? **IF YOU'RE USING COPPER WIRE, CHOOSE THE BASE MODEL. IF YOU'RE USING CO-AXIAL CABLE, CHOOSE THE EXTEND-C MODEL. CO-AXIAL CABLE IS OFTEN USED FOR IP VIDEO SUPPORT.**

You'll find these Ethernet Extenders are easy to use and easy to install. Two are required, one for each end of your extension points. For the best performance, be sure the extender wire/cable is free of load coils, filters and splitters.

Choose the model you need based on three factors:

1. Media type (copper or coaxial)
2. Distance vs. speed requirements
3. Environment (mounting, power inputs and temperature specifications)

If you're extending over copper, use a base model. If you're using coaxial cable, then choose the EXTEND-C models.

If you need higher speed or greater distance than shown, check out the extreme distance extenders on the next page.

Think about each end of your extension. If you have a rack or desktop at one end, and DIN rail at the other, choose one EIS and one EIR model. Why pay for more features than you need? Make the best choice for your environment.

	EIS-EXTEND	EIS-EXTEND-C	EIR-EXTEND	EIR-EXTEND-C
Wire/Cable	Copper	Coaxial	Copper	Coaxial
Maximum Distance/ Resulting Speed	1900m/1 Mbps	2600m/1-5 Mbps	1900m/1 Mbps	2600m/1-5 Mbps
Maximum Speed/ Resulting Distance	50 Mbps/300m	75-85 Mbps/200m	50 Mbps/300m	75-85 Mbps/200m
Ethernet Ports	1	1	1	1
Extension Port	RJ-11	BNC or F Style	RJ-11, TB	BNC or F Style
Temperature Rating	0 to 60°C	-10 to 60°C	-40 to 75°C	-40 to 75°C
Power Input	PS included	PS included	(2) 12 to 30 VDC	(2) 12 to 30 VDC
Mounting	Desk, Rack (EIS-RACK-16)	Desk, Rack (EIS-RACK-16)	DIN, optional Panel (EIRPMKT)	DIN, optional Panel (EIRPMKT)

Power Supplies

MDR-20-24
MDR-40-24

See online for details

Need Cables?

Cat 5e patch cords

See online for details

Mounting Options

EIS-RACK-16
19 inch rack system

EIRPMKT
Panel mount kit (EIR series)

More information available online about B&B Electronic's rack system for Ethernet EIS extenders and media converters.
www.bb-europe.com

New! Managed and Extreme Distance Copper Extenders

When standard extenders don't get the job done – step up to these models

EIRM Managed 1 and 8-port models

- Same rugged industrial specifications as EIR-EXTEND (facing page)
- Web based browser or console port interface
- SNMP management
- EIRM-EXTEND-8 model has 2 VDSL extender ports, IGMP snooping V3 and port –based VLAN and IEEE802.1Q VLAN tagging

EIDM Extreme Distance Model

- Uses an SHDSL technology
- Console port for configuration
- Extends over 3.5 miles (6,248m)
- Extensions consist of 1 or 2 pairs of copper (best speed achieved with 2 pair)
- Ruggedized metal enclosure

EIRM-EXTEND-8

EIDM-EXTEND-2 (FRONT)

(BACK)

ALSO AVAILABLE ON-LINE: **UNMANAGED STANDARD 4 PORT, SINGLE AND MULTI-PORT PoE EXTENDERS**

	EIRM-EXTEND	EIRM-EXTEND-8	EIDM-EXTEND-2
	Managed	Managed	Distance
Wire/Cable	Copper	Copper	Copper
Maximum Distance/ Resulting Speed	1900m/1 Mbps	1900m/1 Mbps	6248m/384 kbps
Maximum Speed/ Resulting Distance	50 Mbps/300m	50 Mbps/300m	9216 kbps/1828m
Ethernet Ports	1	8	2
Extension Port	RJ-11, Terminal block	(2) RJ-11, Terminal block	RJ-45/48
Temperature Rating	-40 to 75°C	-40 to 75°C	0 to 50°C
Power Input	(2) 12 to 30VDC	(2) 12 to 30VDC	Built-in

Customers have requested managed extenders and extenders that stretched distance limits even further. We're pleased to present even more options for your consideration with the managed EIRM-EXTEND models and the EIDM-EXTEND-2 rugged distance extender.

The EIRM-EXTEND series comes in 1 port and 8 port versions, offering you all the advantages of our rugged, industrial extenders with the convenience of managing your network from your desk.

Managing remote assets at distances up to 3 times greater than our standard extenders is the job of the new EIDM-EXTEND-2. It uses SHDSL technology instead of VDSL, and has a console port for easy configuration. Extensions consist of 1 or 2 pairs of copper, however, your best speed performance will come with 2 pairs.

If you have any questions about which extenders are right for you, call our free technical support team at +353 (0)91 792 444 and they'll be glad to help. Or, check out the full line of Ethernet Extenders online at **www.bb-europe.com**.

Power Supplies

MDR-20-24
MDR-40-24

See online for details

Accessories...

EIRSP1	Panel mount kit (EIR models)
EIRPMKT	Industrial Ethernet surge suppressor
DR19RMKT	Adjustable 19-in rack mount kit
EIS-RACK-16	Ethernet pass through receptablE

Need Cables?

Cat 5e patch cords

See online for details

Extend Ethernet Distance over Fiber Optic with Media Converters

The Versatility of Ethernet with the Range and Immunity of Fiber

Communicate with remote devices - gain the signal advantages of fiber

EIR-S-SC

EIR-M-ST

EIR-M-SC

EIR-G-SFP-T

EIS-M-ST

EIS-M-SC

Media converters do more than just convert copper Ethernet signals to fiber. They allow your LAN to be extended beyond the normal 100 meter limit. By using a pair of media converters, LANs can be extended up to 2km with multi-mode fiber and up to 20km with single-mode fiber.

Since your data is traveling via fiber, it's protected from ground loop problems and electrical interference present along the cable run.

If you're looking for industrial toughness, wide temperature protection, built in alarms, and DIN rail mount metal cases – the EIR line is for you.

If you prefer a rack mount, wall or desk converter, you'll be happy with the more economical EIS series.

WANT GIGABIT? BOTH THE INDUSTRIAL EIR SERIES AND THE COMMERCIAL GRADE EIS SERIES HAVE A GIGABIT OPTION THAT REQUIRES AN SFP MODULE. FOR SFP OPTIONS, PLEASE VISIT US ONLINE OR CALL FOR FREE TECHNICAL SUPPORT AT +353 (0)91 792 444

Accessories...

EIRPMKT	Panel mount kit (EIR models)
EIRSP1	Industrial Ethernet surge suppressor
DR19RMKT	Adjustable 19-in rack mount kit
ENSP1F5	Ethernet pass through receptablE
EIS-RACK-16	19-in rack system (EIS models)
EIS-RACK-PS	Additional power supply for EIS-RACK-16

Need Cables?

Cat 5e patch cords
See online for details

Find Surge Suppressors
See online for details

	EIR-S-SC	EIR-M-ST	EIR-M-SC	EIR-G-SFP-T	EIS-M-ST	EIS-M-SC
Series	Industrial	Industrial	Industrial	Industrial	Commercial	Commercial
Copper (RJ-45) port	10/100	10/100	10/100	10/100/1000	10/100	10/100
Fiber Port	Single-mode (SC)	Multi-mode (ST)	Multi-mode (SC)	SFP (Requires module)	Multi-mode (ST)	Multi-mode (SC)
Temperature	-34 to +74°C	-34 to +74°C	-34 to +74°C	-40 to +75°C	0 to 50°C	0 to 50°C
Power Input	10 to 48 VDC	10 to 48 VDC	10 to 48 VDC	12 to 48 VDC	12 VDC (included)	12VDC (included)
Redundant Power Input	Via terminal blocks	Via terminal blocks	Via terminal blocks	Via terminal blocks		
Output Alarm	✔	✔	✔	✔		
Mount	DIN Rail	DIN Rail	DIN Rail	DIN Rail	Desk/Wall	Desk/Wall
Front LED Indicators	✔	✔	✔	✔	✔	✔
Dip Switch Configuration	✔	✔	✔	✔		
MAC Address	2K	2K	2K	4K		
Hardened IEC61000-6-2	✔	✔	✔	✔		
Rack Mount?					Optional	Optional
Panel Mount?	Optional	Optional	Optional	Optional		

USB

Plug and Play Convenience with Industrial Ruggedness

A factory floor is no place for wimpy USB devices that you pick up at your local electronics store. Unless of course, you're willing to play Russian roulette with some pretty expensive equipment.

Ever fry a laptop when you're 300 km from home on a service call? Ouch. Too bad you didn't call us before you shopped elsewhere.

Ever stood 12 feet off the ground and watched your laptop break the cable connection and hit the pavement? Whoops. That hurts.

As an industrial, Medical, Laboratory or Field Services interface, USB has benefits that outweigh the risks. But, you can reduce your odds of disaster with simple fixes...like high retention ports…and isolation.

Find it here. Look for the orange connector – you'll find a high retention port that's 50% stronger than a conventional USB port. It won't let go until you want it too.

You'll also find isolation protection built into many of our USB products. It prevents common surges, spikes and ground loops from damaging your equipment.

SECTION CONTENTS

OUR BEST ISOLATED INLINE USB CONVERTERS

Easy connection - best protection

page 31

MINI & RUGGED DIN RAIL CONVERTERS

Reliable performance whatever your location

page 32

PANEL MOUNT CONVERTERS

Isolated and port powered non-isolated models

page 33

USB ISOLATORS & HUBS

Essential devices for industrial USB applications

page 34

UE204 - FOUR PORT USB OVER ETHERNET SERVER / HUB

Essential devices for industrial USB applications

page 35

New in USB...

USR602

Ruggedized 2 port Isolated USB to Serial Converter features high Retention ports, wide temp, and its shock and vibration tested. Ready made for your industrial environment.

See page 32 for details

USR604

The USB604 is a 4 port version of the USB602. 2 or 4 port, you get the same reliable performance.

See page 32 for details

USB Inline Isolated Converter for RS-422/485

Our #1 best selling USB converter – by a landslide

Pocket sized - carry it with you anywhere!

Five Reasons You'll Love It

- High retention USB port means cables won't accidentally loosen or drop out
- Port power means no separate power supply is required
- 2 kV VDC isolation – protection from surges, spikes and noise
- USB 1.0, 1.1 and 2.0 compatible
- Removable terminal block means flexible RS-422/485 wiring

USB is the connectivity workhorse of today's PCs, but many commercial and industrial devices still use RS-422/485 serial interfaces. Field technicians need robust, reliable conversion solutions to protect their PC's from power surges and spikes. USB ports are also common on POS systems, instrumentation, medical devices and lab equipment – environments ripe for power fluctuation and ground loops. Simply plug the converter into an available USB port, configure as an additional COM port, and the converter is compatible with Windows applications.

USOPTL4

APPLICATIONS: Field Service, POS Systems, Lab Instrumentation, Industrial Equipment

USOPTL4	Isolated RS-422/485 Inline USB converter
USOPTL4-LS	Locked serial number version of USOPTL4
USPTL4	Non-isolated inline USB converter
USPTL4-LS	Locked serial number version of USPTL4

Note...

Field Service Technicians usually prefer the locked serial version for installation convenience.

USB Inline Isolated Converter for RS-232

Same great features as our #1 seller

Five Reasons You'll Love This One, Too.

- Port power means no separate power supply is required
- 2 kV VDC isolation – protection from surges, spikes and noise
- USB 1.0, 1.1 and 2.0 compatible
- DB9 male serial connector
- 460 kbps baud rate

This compact little converter has many of the features as the USOPT4 model, only with a DB9 male (DTE) serial connector for RS-232 conversion. Available in both a standard version and as a "locked serial" version.

USO9ML2

USO9ML2	USB to RS-232 inline isolated converter
USO9ML2-LS	Locked serial number version of USO9ML2

Mini Non-Isolated Inline USB to Serial Converters

Extremely compact for mobile applications

Check online for more great models and serial port/connection options

485USB9F-2W

232USB9M

Features & Benefits

- Includes a 1 meter USB cable and driver CD
- Locked serial version available: add –LS to your item number when ordering
- RS-232 baud rate = 460 Kbps
- RS-485 baud rate = 921.6 Kbps
- RS-485 mini converters are configured only as 2 (2W) or 4 wire (4W) models

These non-isolated mini converters are typically used in mobile applications. With the 1 meter USB cable, they coil easily and will handily fit into your laptop case.

The mini-converters with the terminal block as the serial connector feature high retention ports. TTL 5.0V and 3.3V models available.

485USBTB-2W	RS-485 2 wire/terminal block USB converter
485USB9F-2W	RS-485 2 wire/DB9 female USB converter
232USB9M	RS-232 DB9 male USB converter

USB

New! Rugged 2 or 4 Port USB Converters for Industrial Environments

Shock, vibration and drop tested for durability and performance

High retention USB ports, DIN rail or panel mount options

USR602

USR604

Features & Benefits

- Modbus SCII/RTU compatible
- 2 kV port to port isolation
- High ESD protection 8 kV contact, 15 kV air
- Dual input power 10-48 VDC
- Wide temperature (-40 to 80°C)

These USB converters can take the punishment that would cripple lesser competitors. The rugged metal case house devices tailor made to stand up to unpleasant conditions. Wide temperature rated, (-40 to 85°C), 2kV port to port isolation, high ESD protection, shock and vibration tested. We even dropped them. They passed every test with flying colors.

The orange high retention USB ports, (50% stronger than standard ports) also mean your cables will stay connected.

The serial port connector for both the 2 and 4 port version is DB9 male.

USR602	2 port rugged USB RS-232/422/485 converter
USR604	4 port rugged USB RS-232/422/485 converter
MDR-20-24	DIN rail mount 24V, 1A, 24W
PS12VLB-INT-MED	12VDC power supply, locking barrel plug

Isolated Panel Mount USB to Serial Converters

2-port RS-422/485 model
2kV RMS port-to-port optical isolation

Features & Benefits
- 2-wire and 4-wire compatible
- High retention USB ports
- USB 2.0 (backward compatible)
- Supports Automatic Send Data Control
- Port powered or external power

This converter automatically configures on Windows 98, ME, 2000, XP, Vista and Windows 7. It also supports transmit, receive and handshake lines, smoothing out communications between the PC and the linked devices.

USOPTL4-2P	2 port RS-422/485 USB converter

Need Cables?
Find Cables
See online for details

You might also need...

MDR-20-24	24VDC, 1.0 A output DIN rail power supply
422HESP	RS-422/485 surge protector
485HESP	RS-485 surge protector

4-port RS-422/485 model
2kV RMS port-to-port optical isolation

Features & Benefits
- 2-wire and 4-wire compatible
- High retention USB ports
- USB 2.0 (backward compatible)
- Supports Automatic Send Data Control
- Port powered or external power

Just like the 2 port model, the 4 port model automatically configures on Windows 98, ME, 2000, XP, Vista and Windows 7. It also supports transmit, receive and handshake lines, smoothing out communications between the PC and the linked devices.

USOPTL4-4P	4 port RS-422/485 USB converter

Need Cables?
Find Cables
See online for details

You might also need...

MDR-20-24	24VDC, 1.0 A output DIN rail power supply
422HESP	RS-422/485 surge protector
485HESP	RS-485 surge protector

2-Port RS-232 Model

2kV RMS port-to-port optical isolation

Features & Benefits
- DB9 male serial connectors
- High retention USB ports
- USB 2.0 (backward compatible)
- Supports Automatic Send Data Control

The 2-port RS-232 model features the same automatic configuration as the RS-422/485 model listed above. With RS-232 transmit, receive and handshake function, TDA, TDB, RDA, RDB, GND are fully supported.

USO9ML2-2P	2-port RS-232 USB converter

Need Cables?
Find Cables
See online for details

You might also need...

232HESP	Surge protector
MDR-20-24	24VDC, 1.0 A output DIN rail power supply

4-Port RS-232 Model

2kV RMS port-to-port optical isolation

Features & Benefits
- DB9 male serial connectors
- High retention USB ports
- USB 2.0 (backward compatible)
- Supports Automatic Send Data Control

The 4-port RS-232 model features the same automatic configuration as the RS-422/485 model listed above. With RS-232 transmit, receive and handshake function, TDA, TDB, RDA, RDB, GND are fully supported.

USO9ML2-4P	4-port RS-232 USB converter

Need Cables?
Find Cables
See online for details

You might also need...

232HESP	Surge protector
MDR-20-24	24VDC, 1.0 A output DIN rail power supply

The World's Most Compact USB to USB Isolators

These little isolators pack a powerful punch against noise, surges and spikes

UH401

Features & Benefits

- High retention USB connectors
- Wide temperature protection (-40 to +80°C)
- USB bus powered – no need for external power
- Includes 1 meter USB cable
- Meets UL 60601-1-2 specifications for use in medical devices

At just 2.0 x 1.7 x 0.8 inches, you get outstanding protection for a tiny investment. This isolation barrier eliminates ground loops – which are disruptive for any measurement applications, and protects expensive equipment against electrical noises, power surges and spikes.

Available in both 2kV and 4kV models, you select the level of protection you need. The 4kV model (UH401) meets UL EN60600-1-2 specifications for use in medical devices – without any additional components or software modifications. 12 Mbps USB speed.

APPLICATIONS: Industrial Equipment, Medical, Lab Instrumentation, POS Systems

You might also need...

USBAMBM-3F	USB cable, 1 meter (3 ft.)
USBAMBM-6F	USB cable (one included), 2 meters (6 ft.)

UH401	4 kV USB to USB 1 port isolator
UH401-2KV	2 kV USB to USB 1 port isolator

USB

New! Industrial Grade High-Speed USB Hubs

Both isolated and non-isolated models available

Versatile 6 panel mount or DIN rail mounting options

UHR204

UHR304

Features & Benefits

- High ESD protection (8kV contact, 15kV air) ensures no system downtime
- High retention USB ports
- 4kV isolation (model UHR304)
- 5.5 x 3.5 x 1.4 inches without panel brackets
- Wide temperature (-40 to 80°C)

Tough and reliable, the new USB hubs are available in both an isolated and non-isolated version. Housed in a rugged metal case, these hubs are well suited for top performance in any industrial setting. Both the USB host port and the downstream ports are designed with high retention connections, ensuring a solid connection regardless of environmental stressors. The UH304 has been tested to 50G shock and 4g vibration standards. Flexible mounting include 6 way panel mount and DIN rail mount options.

Model UH304 also meets UL EN60601-2 specs for use in medical devices.

UHR204	Non isolated 4 port USB hub
UHR304	4kV isolated 4 port USB hub

You might also need...

MDR-20-24	24 VDC 1A DIN rail power supply

UE204 - Four Port USB over Ethernet Server / Hub

The UE204 USB over IP Server / Hub allows multiple PC's to interact with USB peripheral devices over your local area network. Simply load the free software on your PC and it will locate the USB hub on the network and allow you to use peripheral devices as if they where attached locally. They are ideal for applications in which a installing a local PC would be to cumbersome or expensive, such as kiosks or security applications.

High speed USB 2.0 (480 Mbps) and Gigabit Ethernet allows you to use high bandwidth devices such as IP cameras and some isochronous devices. The easy to use software allows for simple installation and easy setup.

The UE204 is a simple solution for accessing remote USB devices.

Features & Benefits

- 10/100/1000 Mbps Ethernet
- USB 2.0 @ 480 Mbps
- Compact Size
- 15 kV ESD Protection
- International Power Supply Included

USB & Ethernet Technology

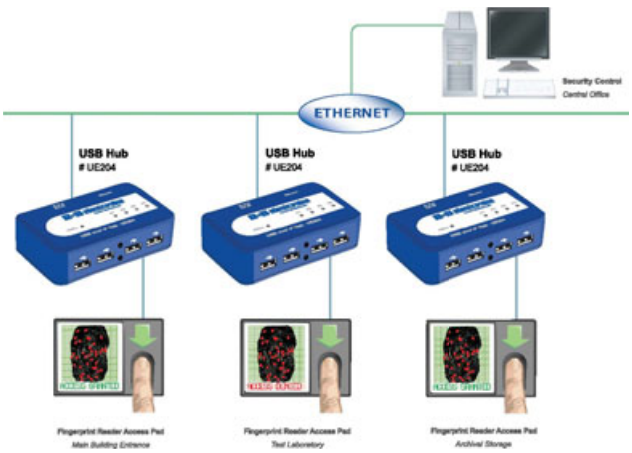
USB Compatibility	1.1 and 2.0
USB Speed	1.5, 12, and 480 Mbps
USB Connector	4 x USB Type A Female
Ethernet	10/100/100 BaseT
Ethernet Connector	RJ-45
IP Address	Default = DHCP
	169.254.10.10 if DHCP Not Available
	User Configurable
Operating System	Windows 7, 32 & 64 bit
	Windows 2008 Server, 32 & 64 bit
	Windows Vista, 32 & 64 bit
	Windows Server 2003 32 and 64 bit
	Windows XP 32 and 64 bit
Configuration Software	Included with User Manual on CD

Power

Source	External PSU
Power Connector	5.5 mm Barrel Plug, Center Positive
Input Voltage	5 VDC
Power Consumption	2.5 A
USB Downstream Power	500 mA per Port
PSU Input	100 to 240 VAC, 50 / 60 Hz, 0.8 A
AC Input Blades	US, EU, UK Included
PSU Output	5 VDC, 3A

Indicators

Power / Active	Green LED – ON when power applied
P1 – P4	Green LED – ON when USB Port Connected



Ordering Information

UE204	USB OVER ETHERNET SERVER 4 PORT

WIRELESS

SECTION CONTENTS

WIRELESS ETHERNET BRIDGE

Zero Set Up - Ultra High Speed

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Zlinx Xtreme OUTDOOR RATED

Wireless Radio Modems & I/O

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Zlinx STANDARD

Short & Long Range Wireless Radio Modems & I/O

page 39

Get from Here to There with Wireless Solutions from your Connectivity Experts

Wireless has rapidly been redefining "how to get there from here" for industrial networking. The advantages seem crystal clear – eliminate expensive cable runs, quickly install and manage remote assets, never negotiate right-of-way access again. So, what's the hesitation?

Well...there are a bunch of questions about wireless.

- What radio is right for me? Wi-Fi? 2.4 GHz?
- Will it meet my communication requirements?
- How am I going to get this thing installed and tested?
- What am I missing?

Call us. Our tech team would love to talk to you about wireless. Cut through the uncertainty and get straightforward answers to complex questions. You deserve to save yourself time and frustration.

Whether you're ready to buy wireless today…or just learning about it for tomorrow, we're here to help. Consider us your industrial wireless experts. (We really are!) Toll free **+353 (0)91 792 444**

Award Winning Wireless

ZXT24-RM

Our Outdoor Rated Zlinx Xtreme line of wireless radio modems, peer-to-peer and Modbus I/O's were enthusiastically received by customers last year. Superb functionality – great value!

See page 38 for details

Plant Engineering PRODUCT of the YEAR Finalist 2010

GhostBridge5 Wireless Ethernet Bridge – Wicked Fast – Wicked Easy

Secure, long range wireless Ethernet right of the box

Zip...Zilch...Zero Set Up

GHOSTBRIDGE5

Features & Benefits

- An 80°, 15 dBi sector antenna integrated into the housing
- 5GHz radio built from 802.11n 2X2 MIMO technology for long range connectivity (15 km/9 miles) – No low tech proprietary RF chipset!
- Temperature range of -30 to +80°C
- Case: UV stable plastic rated for outdoor use
- Data rate: 150 Mbps, max

Additional Features & Benefits

- Power (8W); Includes (4) 24V PoE injector adapters – 2 for AC, 2 for DC so you can use any available power
- Configured to WPA2 128-bit security – user configurable to other standards
- Mounting: Integrated pole mount (optional wall mount brackets sold below)
- RJ45 connectors for data and power

APPLICATIONS: Create a transparent, secure, high-speed link between remote stations and a central office. Bridge 2 networks or hard-to-reach nodes together. Connect remote devices (IP camera or other) to a LAN.

GhostBridge5	Wireless Ethernet Bridge (sold as matched pair)

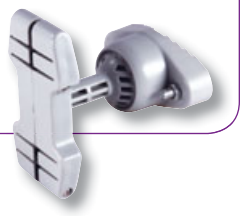
You may also need:

MOCAP silicone installation tape: for water tight seals

1" wide - 36' roll

Optional wall mount bracket

GMT25



Wireless Ethernet was never this easy or this inexpensive. Just open the box, aim it, mount it and plug it in. That's it. Each pair is matched and pre configured.

Long Range: The built in sector antenna gives you 80 degrees of coverage, so lining them up is easy, even if you don't have a clear line of sight. The antenna has 15 dBi gain to give you up to 9 miles of range with no additional antenna.

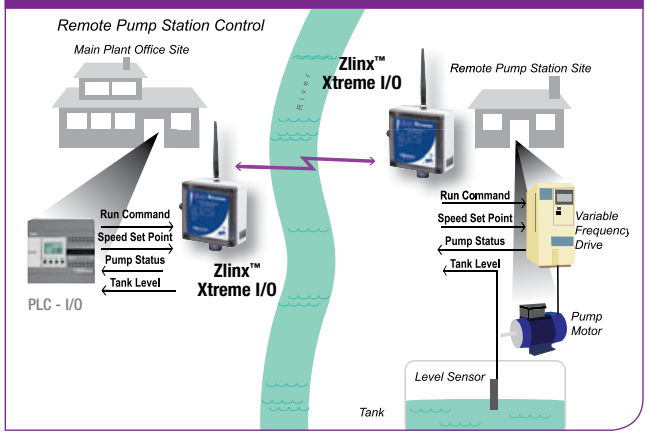
High Speed: At up to 150 Mbps, there are no bottlenecks or latency problems, even with demanding applications like video.

Worry Free Security: WPA2 128-bit security, the highest level allowed by the US government on devices that cross international boundaries. It's rock solid secure. No need for any extensive set-up to keep your data safe.

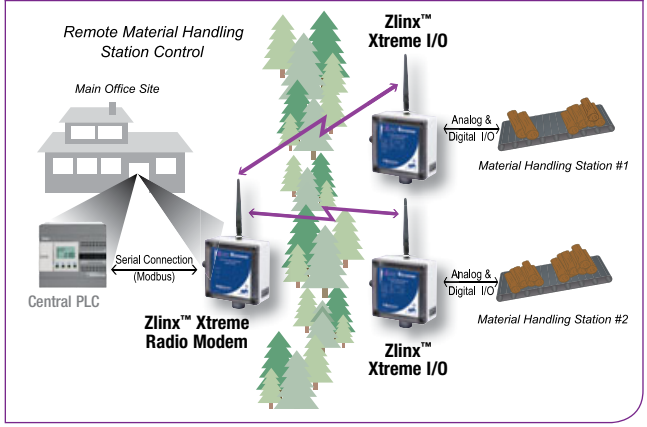
With GhostBridge5 you'll achieve blazing fast link speeds – performance that will make you wonder why you ever ran cables in the first place!

What Walter H,, President of Vortechs Automation, had to say after installing GhostBridge: ***"I went from cups and strings to super-fast Ethernet with the GhostBridge punching through 700 feet of trees to beam the signal to my remote site."***

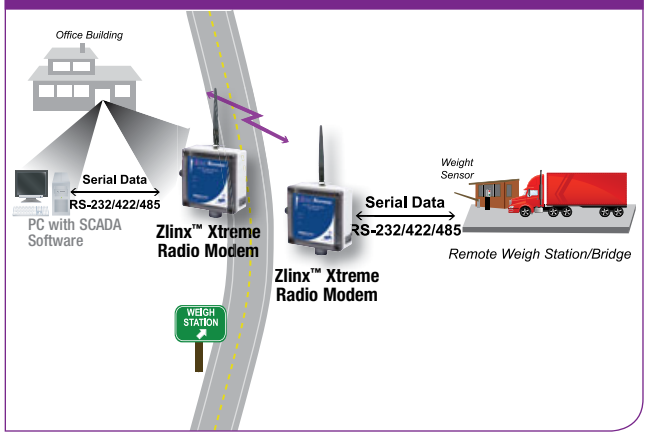
Peer-to-Peer I/O (cable replacement)



Modbus I/O



Serial-to-Serial Wireless Communications



DesignNews Golden Mousetrap Best New Products Awards 2011 Finalist

Plant Engineering Product of the Year Finalist 2010

Control Engineering 2011 Engineers' Choice Awards Honorable Mention

Zlinx™ Xtreme

IP67, Outdoor, Industrial Wireless

Peer-to-Peer or Modbus I/O

Features & Benefits

- IP67 rated – direct machine mount
- Best in class Latency
- Top of the line AES security
- Flexible configuration for multiple types of analog/digital I/O's

With push button set-up, Zlinx Xtreme introduces plug and play simplicity into a single box for industrial wireless. Whether you need to monitor remote I/O devices, or connect multiple devices to a Modbus RTU master, Zlinx Xtreme is designed for outdoor use and is compatible with standard indoor Zlinx units.

ZXT24-IO-222R2	2.4 GHz IP67 I/O module

Peer to Peer I/O requires 2 I/O modules, Modbus I/O requires 1 Radio Modem and a Zlinx I/O module for each remote device.

You may also need...

ZZ24D-ANT1	2.4 GHz spare antenna
CLG-60-24	24VDC 60W, IP67 outdoor power supply
USBAMBM-6F	USB programming cable 6 ft

Zlinx™ Xtreme Radio Modems

Easily connect multiple serial devices

One-to-one and one-to-many configurations possible

Features & Benefits

- Same features as the I/O modules
- Standard or high gain antenna options
- Connect to RS-232/422/485
- Compatible with Maxstream™ radios

IP67 rated outdoor serial radios can be used for one-to-one device communication, or one-to-many. Ranges up 14 miles outdoors with the standard antenna. Up to 40 miles with the optional high gain antenna. Questions on range? Go to **www.bb-europe.com/wireless** and try out our wireless range estimator.

ZXT24-RM	2.4 GHz Radio Modem

You may also need...

ZZ24D-ANT1	2.4 GHz spare antenna
CLG-60-24	24VDC 60W, IP67 outdoor power supply
USBAMBM-6F	USB programming cable 6 ft

Zlinx™ Industrial Wireless I/O

Choose Short or Long Range

Class 1/Div 2 Rated – Windows 7, 64 bit compatible

Features & Benefits

- Peer-to-Peer mirrored I/O mapping
- Versatile Power 10 to 40VDC or 24VAC
- AES Encryption
- Wide Temp
- Low latency response rates –to 15mS

With range options of 300 feet to 40 miles, the Zlinx™ Industrial offers a wide range of possibilities for P2P cable replacement and Modbus device control. Both 2.4 GHz short range and 900 MHz long range modules come with 2 and 4 digital I/O options or 2 digital/2 analog I/Os. A maximum of 247 devices can be connected to the Modbus master. Modbus I/O requires 1 serial radio modem. Call our free tech support hotline at +353 (0)91 792 444 to discuss your ideal configuration.

ZZ24D-NB-SR	2.4 GHz 4 Digital (PNP) I/O
ZZ24D-NA-SR	2.4 GHz 2 Digital/2 Analog (PNP) I/O

Zlinx™ Xtreme I/O Starter Kits

Everything you need in one box

Peer-to-Peer I/O Kit

Great for cable replacement between multiple digital and analog I/O's.

- 2 - 2.4GHz Wireless I/O's
- 2 - 24V power supplies
- 1 - 6 ft USB programming cable
- Cable Glands and conduit hubs
- Quick Start Guides

Modbus I/O Kit

Connect multiple remote devices to a Modbus RTU master.

Includes everything above PLUS 1 2.4GHz Wireless Radio Modem and 1 additional 24V power supply

For further details please call +353 (0)91 792 444 or visit us online at www.bb-europe.com

Zlinx™ DIN Mount Radio Modems

License Free – no annual costs

Serial cable replacement has never been easier

Features & Benefits

- Modbus compatible
- Class 1/Div 2 rated (long range only)
- RPSMA male dipole, antenna included
- Compatible with Digi Maxstream™
- Dual power supply

Zlinx™ makes running cable obsolete when connecting serial devices. The 900 MHz long range radio has an indoor maximum distance of 3000 feet, and outdoor maximum of 14 miles (with supplied antenna), or up to 40 miles with the high gain antenna. Choose one radio modem per serial device you with to connect. Always choose the same frequency modems.

ZP24D-250RM-SR	2.4 GHz radio modem

See online for a full line of optional accessories including DIN rail power supplies, spare antennas, DIN mounting clips, DIN to Panel conversion brackets and Surge

Zlinx™ Radio Modem Starter Kits

Choose Short or Long Range Radios

Zlinx™ IP30 and Zlinx™ Xtreme IP67 rated options

Each kit includes:

- 2 - Radio modems
- 2 - 24V power supplies
- 2 - 6 foot serial cables
- Software CD
- Quick Start Guide

Get started now with our serial to serial wireless kits. All the basics for wireless serial device communication in one box.

RM-SR-KIT	IP30 2.4GFz short range starter kit

B&B electronics
MANUFACTURING COMPANY

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Oranmore, Co. Galway, Ireland

Phone: +353 (0)91 792 444
Fax: +353 (0)91 792 445

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IP30 DIN Mount Cases • Wide Temperature Versions
Custom Variations Available

NEXT DAY DELIVERY

Put It All Together

Build your entire communications system with accessories from B&B Electronics. From our ever popular serial communication cables to industrial power supplies, we select components for their proven reliability in extreme conditions. With our design and manufacturing expertise, we offer you only what we would use ourselves.

Cables and Connectors

Power Supplies

Surge Protectors